

CLAIMS

1. A method for assisting a mobile node (MN) assigned to a home subnet and in
a visited subnet to transmit a packet, the MN being unaware that the MN is no longer
5 in the home subnet, the method comprising:

receiving from the MN an Address Resolution Protocol (ARP) Request to
discover a first Medium Access Control (MAC) address of a device in the home
subnet, the ARP Request containing an Internet Protocol (IP) address assigned to the
device;
10 determining that said IP address does not belong to the visited subnet; and

returning, in response to determining that said IP address does not belong to
the visited subnet, an ARP Response containing a second MAC address, to the MN.
2. The method of claim 1, further comprising:
15 receiving the packet addressed to the second MAC address; and

reverse tunneling the packet to the home subnet.
3. The method of claim 1,

wherein returning the second MAC address comprises returning a MAC
20 address that is the MAC address of a designated host.

4. The method of claim 1,
wherein returning the second MAC address comprises returning a
predetermined “dummy” MAC address that is not utilized elsewhere in the visited
subset.

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5. The method of claim 1,
wherein the visited subnet comprises a wireless network, and
wherein the receiving and the returning are performed a designated host
comprising a wireless access point of the visited subnet.

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6. The method of claim 1,
wherein the visited subnet comprises a wireline network, and
wherein the receiving and the returning are performed a designated host
comprising a server in the visited subnet.

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7. A host in a visited subnet configured to assist a mobile node (MN) that is assigned to a home subnet and in the visited subnet to transmit a packet, the MN being unaware that the MN is no longer in the home subnet, the host comprising:
- a transceiver for communicating with the MN; and
 - 5 a processor coupled to the transceiver for controlling the host, wherein the processor is programmed to cooperate with the transceiver to:
 - receive from the MN an Address Resolution Protocol (ARP) Request to discover a first Medium Access Control (MAC) address of a device in the home subnet, the ARP Request containing an Internet Protocol (IP) address assigned to the
 - 10 device;
 - determine that said IP address does not belong to the visited subnet;
 - and
 - return in response to determining that said IP address does not belong to the visited subnet, an ARP Response containing a second MAC address, which the
 - 15 MN will assume to be the MAC address of said device in the home subnet.
8. The host of claim 7, wherein the processor is further programmed to:
- return a MAC address that is the MAC address of the host.
- 20 9. The host of claim 7, wherein the processor is further programmed to:
- return a predetermined “dummy” MAC address that is not utilized elsewhere in the visited subset.

10. The host of claim 7, further comprising
a network interface coupled to the processor for interfacing with a network,
wherein the processor is further programmed to cooperate with the transceiver
and the network interface to:
- 5 receive, from the MN, the packet addressed to the second MAC
address; and
reverse tunnel the packet to the home subnet.
11. The host of claim 10,
10 wherein the visited subnet comprises a wireless network, and
wherein the host comprises a wireless access point of the visited subnet.
12. The host of claim 10,
wherein the visited subnet comprises a wireline network, and
15 wherein the host comprises a server in the visited subnet.

13. A software program comprising executable instructions for assisting a mobile node (MN) assigned to a home subnet to transmit a packet, the MN being unaware that the MN is no longer in the home subnet, the software program, when executed in a host in a visited subnet, programming the host to:

5 receive from the MN an Address Resolution Protocol (ARP) Request to discover a first Medium Access Control (MAC) address of a device in the home subnet, the ARP Request containing an Internet Protocol (IP) address assigned to the device;

determine that said IP address does not belong to the visited subnet; and

10 return in response to determining that said IP address does not belong to the visited subnet, an ARP Response containing a second MAC address, which the MN will assume to be the MAC address of said device in the home subnet.

14. The software program of claim 13, further programming the host to:

15 receive, from the MN, the packet addressed to the second MAC address; and reverse tunnel the packet to the home subnet.

15. The software program of claim 13, further programming the host to:

return a MAC address that is the MAC address of the host.

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16. The software program of claim 13, further programming the host to:

return a predetermined “dummy” MAC address that is not utilized elsewhere in the visited subset.

17. The software program of claim 13,
wherein the visited subnet comprises a wireless network, and
wherein the software program is arranged to be executed in a wireless access
point of the visited subnet.

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18. The software program of claim 13,
wherein the visited subnet comprises a wireline network, and
wherein the software program is arranged to be executed in a server in the
visited subnet.

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